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Quarterly Report II
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AGRICULTURE TECHNOLOGY PROGRAM IN TURKMENISTAN



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PROJECT OVERVIEW

This report covers second quarter (Q2) activities for year three (Y3) of the USAID Agriculture Technology Program (AgTech) in Turkmenistan.

Project highlights from the second quarter include the technical start of liquid nitrogen (LN) production and supply to regional artificial insemination (AI) specialists across the country, receipt of an import license by the Ahal AI Center manager, and a seminar for the project horticulture partners and seed providers, during which participants discussed the current market situation regarding greenhouse vegetable production and Turkmen regulations on seed imports and sales within the country. Our Ahal AI Center partner, Mr. Nepes Karayev, is only the second Turkmen national in the country with an import license for AI-related goods, which enables the AI Center in Ahal to import frozen bull semen and other related livestock breeding supplies and sell them within the country. Despite these successes, it is noteworthy that in Q2 the AgTech project conducted fewer activities compared to Q1 due to significant delays in approval of submitted project plan of activities by relevant authorities, including the Ministry of Foreign Affairs. However, this impacted only those activities that involved gathering people for seminars in the regions, primarily within the horticulture component.



In Q2 the AgTech project saw positive signs for sustainability of its activities in the form of increased government support for AI activities related to improving the genetics of local cattle breeds. At the end of January 2013, the most widely read newspaper, *Neutrall Turkmenistan*, published an article in which the newly formed State Livestock Union (SLU), a successor of the former State Livestock Association, Turkmenmallyary, revealed its plans for improving the livestock sector. The core of this plan, according to the article, is the creation of AI Centers in each region of the country and a livestock breeding center in the Ahal region. This new state initiative mirrors the efforts of USAID in Turkmenistan regarding livestock development. The emergence of the national interest in developing AI services indirectly resulting from AgTech activities over the past 2.5 years suggests potential increases in GOT public funding for this work and will enable AI to continue and develop in the country for many years to come. The representatives of SLU have already approached project specialists and the Ahal AI Center manager seeking technical assistance in this work and proposed combining efforts to work together in the Ahal region.



Financially, the project is doing well, though the burn rate was less due to restrictions and delays in project implementation. On February 22, the Task Order Contract was fully obligated to its ceiling of \$3,423,280. As of March 31, the Ag Tech project estimates accrued expenses of \$2,227,395.88, representing about 65% of total available funding.

Next Step:

Prepare top AI specialists for intensive training in the U.S. on bovine breeding activities.

PROJECT ACTIVITIES AND OBJECTIVES

While many training programs have halted, results continue to grow. As of March 31, 2013, 464 calves have been born and are being tracked in their development. In reality, over 1,000 calves have been born from project supported activities, but the challenges in reporting from remote areas limit the ability to precisely count the number of calves born in total. Later this year it is expected that the first generation of calves will begin to breed and produce milk.

The project has also conducted an audit of equipment procured and specialist needs to make an additional procurement of portable Dewar flasks, bull semen and other supplies such as plastic gloves and sheaths for the AI syringes. This is being planned in conjunction with partners for cost sharing.

Meanwhile, the greenhouse partners have shown mixed results this year. Overall production in the fall harvests were lower than anticipated; however, based on historical trends, several farmers in Mary and Lebap took risks of planting a month early or late in order to capture more income from price shocks that hit before and after the majority of tomatoes and cucumbers are harvested.

Livestock Component

BREEDING IMPROVEMENT

In Q2 of Y3 the number of inseminated cows by project AI specialists in the regions has reached to 2,556 cows. The number of healthy born calves has also significantly increased during the reporting period and project could track 464 calves born as of March 31, 2013. The project assumes the number of born calves is likely more than twice as much of the recorded number. However, due

to existing challenges in tracking the calves born, related to remote and sparse location of many livestock households, recording all calves born from project imported bull semen is a task difficult to accomplish without extra resource allocation.

With meat prices rising throughout the country, the pressure to sell stock to the meat market becomes a major challenge to the development of the breed. However, the project is consulting with breeding specialists in the U.S. to determine the best breeds to introduce and



cross-breed with existing cows to maximize yields and income. Early suggestions include Jersey cows for increased milk fat percentage and Simmental cows for meat. Mr. Nepes Karayev has agreed in principal to co-fund 33% of the next procurement of 6,000 doses of bovine genetics, which will include new varieties for farmers interested in diversifying their herds based on local market demand.

Challenge: Documenting the increase in milk yield and income remains one of the largest challenges to monitoring and evaluation on the project. Cow cards left from December's consultancy with Veterinarians Without Borders have been translated and distributed to major partners in order to capture accurate results and improve farm efficiency.

ESTABLISHMENT OF ARTIFICIAL INSEMINATION CENTERS

With the establishment of the AI Centers in Ahal and Dashoguz in late 2012, this quarter's activities have switched focus to more marketing support for those centers to ensure that demand for new cow breeds is connected to the newly available resources that can provide the desired services to farmers. The project has developed 1500 additional brochures in Turkmen to distribute among interested farmers in Ahal and Dashoguz. Based on this quarter's M&E results of new calves born, it is clear that both Ahal and Dashoguz are areas of high demand for breeding services, and these AI Centers will continue to serve as a support center for AI specialists and farmers in these regions.

Looking ahead, the next AI Center will be opened in Lebap in collaboration with Mr. Maksat Gurbanov and the Turkmenabat Veterinary Service. The project is in its final stages of determining the best location, as Lebap is a very long region and will require a central location in Turkmenabat. The advantage will be ease of access for all farmers in the region to obtain breeding materials at the expense of having an "on-the-farm" location where services and training can be combined for maximum impact. As soon as AgTech received MFA approval for the event, an opening will take place, currently scheduled for June in Q3.

The project has also identified three potential partners for a 2nd AI Center in Ahal; however, those relationships have not yet solidified into partnerships. In one case, the interested party wanted to focus on horse breeding as opposed to dairy/meat cattle. Depending on available funding, the project may support the SLU by linking these potential partners with the leaders of the new union to create another facility that can improve the growth of AI services in Ahal.

Quote:

"I'd like to express my gratitude to the project for their concern about our livestock farmers. All my neighbors have cattle, and after seeing my calf, they all want to use AI on their cows to make highly productive cattle. About 8-9 families are already in a waiting list for this service."

*Mrs. Maysa Salarova
Altyn Asyr Farm
Union, Mary*





On March 28, Mr. David Westerling, Deputy Director for USAID's Economic Development Office, visited Turkmenistan and toured the Ahal AI Center. Our lead AI trainer, Ms. Katya Chichnayeva, gave an on-the-farm demonstration conducting artificial insemination using project-procured equipment. He also visited the USAID and Chevron co-funded liquid nitrogen generator and saw it in its operational state.

CHALLENGE: With the creation of the State Livestock Union, there is a fear that government investments in livestock

development could be redundant and/or compete with project-led initiatives. AgTech is working closely with leaders of the new SLU to determine adjustments that should be made on either party's part to maximize the productivity in the sector for public and private sector actors alike.

INPUTS AND SUPPLIES

The AgTech project has assisted its partners and AI technicians by identifying a local supplier of AI consumables in Ahal, and breeders are now able to buy gloves and lubricating oil locally. The identified supplier is also planning to import a large quantity of Bro-Estrofan, a heat-inducing hormone that is in high demand among AI specialists, but not readily available in the country. The project continues to seek new suppliers while communicating with existing sellers to introduce AI-related products and facilitate the relationship between suppliers and AI service providers.

With project support, Mr. Nepes Karayev, a project partner and the manager of the newly opened AI Center in Ahal has been granted a license for providing AI services, the scope for which includes trading and importing the AI-related products. He is the second such Turkmen person in the private sector with this license and the first entrepreneur granted a license for this purpose in the last 1.5 years. Mr. Nepes Karayev has entered into negotiations with Ege Vet, the Turkish supplier of frozen bull semen and distributor for World Wide Sires that AgTech sent partners to meet in late August of last year. This represents an important step by a local partner in building the market linkages required for conducting AI services using imported supplies. The growth of commercial and farm level interest in AI activities in the country continues to serve as necessary prerequisite for the long-term sustainability of AI activities. The AgTech project will continue to provide technical and other marketing assistance to AI Centers to support and promote their activities.

Next Step:

Continue to work side-by-side with the new State Livestock Union to ensure long-term sustainability of livestock development activities in Turkmenistan.

Next Step:

Map the process for independent businessmen to obtain licenses for the import, sale and distribution of livestock reproductive equipment.

AgTech held a number of advisory meetings with private farmer entrepreneurs who want to build large-scale farms and greenhouses within the State Program for Economic Development. Increasingly more people in the private and public sector are approaching the USAID AgTech project seeking advice and consultancy. One of the latest examples of increased interest in project activity is the SLU's plan to create five AI Centers, one in each region of the country. The representatives of the Ahal branch of the SLU have already approached project Ahal AI Center manager with a proposal to collaborate and act together. This signifies the recognition and appreciation of the USAID AgTech project from the GOT for its activities within the country. The AgTech project is proud to continue providing technical support in working jointly with the GOT relevant organizations and will remain open for proposals from public sector official representatives for the remaining life of the project.

CHALLENGE: The process for licensing independent entrepreneurs and service providers that wish to import bovine reproductive equipment remains unclear. While the project has worked with Turkmen government officials to ensure that all paperwork has been completed as required by law, the process is not simple and requires considerable hand-holding for AI practitioners unfamiliar with legal parameters of licensing. Looking ahead, the project will map out the steps and processes required for obtain a license to import, sell and/or distribute AI-related goods in Turkmenistan.

LIQUID NITROGEN PRODUCTION

The liquid nitrogen (LN) generator, co-funded by USAID and Chevron, is now producing up to 40L per day as needed to keep frozen stock of bull semen safe in storage until its ready for use. By using the imported 40L and 50L Dewar flasks as storage devices, AI service providers are able to restock at their local AI Center instead of having to travel to Ashgabat each time they need more LN for their livestock breeding activities. For now, the machine is housed at the State Veterinary Laboratory in a separate building on the grounds. The project received USAID approval for disposition of the property and is in the final stages of transferring ownership of the property to the State Veterinary Laboratory.

Horticulture Component

GREENHOUSE IMPROVEMENT PROGRAM

Two and half years into the program, AgTech is happy to report that partners continue to build and improve their greenhouses. To date 246 greenhouses have been built and/or renovated among project training participants. Q2 saw an additional 30 greenhouses in the following velayats built or reconstructed to better specifications:

- Mary – 17
- Lebap – 12
- Dashoguz – 1

CHALLENGE: Only four other greenhouses have been built in Balkan despite efforts to jump start the horticulture sector in the western part of Turkmenistan. One factor for this was family health issues of AgTech's Balkan partner that have slowed the introduction



of greenhouse practices to people interested in building greenhouses and limited production results.

HORTICULTURE PRODUCTION & IMPROVEMENT

Due to lack of approval for the project activities from the relevant local authorities, the project had to postpone planned velayat training seminars on the use drip irrigation in greenhouses for February and March. Instead, at the end of March 2013, project has conducted a round table meeting for Horticulture partners and seed providers in the project office in Ashgabat as an alternative activity agreed upon with USAID as a contingency plan. Participants included all project horticulture partners from the regions, three licensed seed providers and a representative from the State Seed Inspection. This gave an opportunity for participants to discuss topics including seed import issues, other input supplies, current market situation of greenhouse vegetables (e.g., customer demands for certain varieties and qualities), and challenges facing the greenhouse input supply market. Mr. Gurban Charyyev, the Head of the Production Department of the State Seed Inspection of Turkmenistan, gave a presentation for participants on state regulation of seed production, import and registration related issues. This kind of meeting contributed to the program's development of extension skills of project's horticulture partners, which is the long-term project goal within the horticulture component.

After establishing a relationship last year with the Ukrainian branch of Rijk Zwaan, a Dutch seed company, the project has maintained regular communication to plan a study tour for a small group of local seed providers in June of this year. Following several unsuccessful attempts by the company's representative to visit the country, Mr. Murad Nobatov, AgTech's Private Sector Agribusiness Specialist, flew to Turkey and has met the director of Ukrainian Branch of the company, Mr. Sergey Vasilevski to discuss opportunities for collaboration and the details of the planned study tour. Rijk Zwaan has proposed organizing site visits for the project group to their trial fields in Azerbaijan and Uzbekistan in the second half of May 2013 to demonstrate the results of their field research, followed by a one-week study tour to Ukraine in the beginning of June. This tour would include trial field visits across the country and training sessions in seed and seedling preparation and marketing. Out of two dozens of licensed seed suppliers in the country the project has identified 3-4 entrepreneurs that are prepared to cooperate with the project in this work. AgTech also plans to include its horticulture partners from the regions for the planned study tour, where the participants will

Next Step:

Prepare greenhouse partners and input suppliers to meet Dutch seed distributor, Rijk Zwaan, in June in Ukraine to discuss business and trade opportunities



learn not only about modern techniques of seed selection and production, but also cross-border import-export issues and marketing skills.

CHALLENGE: Although the project has managed to host a training program on drip irrigation at the project office, it does little to offer the same value as an “on-the-farm” demonstration as could be provided in local seminars. The entire quarter went without any seminars due to waiting for answers from the Ministry of Foreign Affairs regarding AgTech’s planned training activities in horticulture.

PUBLICATIONS

The project has prepared and printed a color leaflet on drip irrigation for dissemination among partner farmers and training participants. This simple, yet informative leaflet explains economic and environmental benefits of drip irrigation system and contains brief instructions on materials and installation requirements of the system. Each partner in the regions was given 30 leaflets for further distribution among greenhouse producers, who participated in the project-conducted trainings.

AgTech has also prepared two booklets within the Horticulture component: One on “Greenhouse construction” and the other on “The Pest and Disease Control of greenhouse tomatoes and cucumbers”. The booklets have been edited, proofread and approved by USAID for branding and marking clearance. As of the end of Q2, booklets are in printing order and will be ready for distribution at the beginning of the next quarter.



PMP TARGETS AND DEVIATIONS

Performance Indicator Monitoring

Performance Indicator	Performance Indicator Definition	Year 3 Proposed	Year 3 Actual (Q2)
50% increase in HH income	<i>Horticulture HHs and farms increasing income by 50%</i>	1000	268
	<i>Livestock HHs and farms increasing their income by 50%</i>	1000	N/A
Person hours of training completed in private sector productive capacity supported by USG assistance	<i>Number of hours of training completed by beneficiaries and training participants, disaggregated by gender</i>	3000	1164
Farmers, processors and others who have adopted new technologies or management practices	<i>Number of beneficiaries and training participants using new technologies or practices as introduced by the project, disaggregated by gender and region</i>	500	730
Quantity of produce grown and/or sold	<i>Farmers, buyers or labs are using AI, improved feed, vet services, greenhouses, drip irrigation, grading, post-harvest packaging practices training</i>	Baseline + 150 %	57%
Value of produce sold to local and international markets	<i>USD value of goods in livestock and horticulture sector disaggregated by product and velayat</i>	Baseline + 40%	63%
Number of agriculture-related firms benefiting directly from USG supported interventions.	<i>Number of input providers and buyers strengthened to provide farmers with necessary inputs.</i>	150	13
Number of greenhouses constructed or improved	<i>Number greenhouses constructed and/or renovated in each velayat</i>	100	55
Land under improved technologies or management practices	<i>Indicates the number of ha under greenhouse or livestock project activities (existing and new land).</i>	500	20

Number of Training Hours in Q2 and Year 3 Totals (disaggregated by gender and region)

Region	Female	Male	Total Q2	Total Y3
Ahal	4	71	75	627
Mary	16	69	85	157
Lebap	12	102	114	202
Balkan	0	21	21	29
Dashoguz	12	69	81	149
Sub total	44	332	376	1164

Number of Greenhouses Constructed and/or Renovated in Each Velayat

Region	Completed in Q2	Total Completed in Y3	Total Project To Date
Ahal	0	3	39
Mary	17	19	108
Lebap	12	28	90
Balkan	0	0	4
Dashoguz	1	5	5
Total:	30	55	246

Farmers & Processors that have Adopted New Technologies

Region	Total in Y3	Total Project To Date
Ahal	277	885
Mary	84	504
Lebap	291	527
Dashoguz	78	347
Balkan	0	4
Total:	730	2267

Variations between the data collected from each Velayat are explained below:

The 2012 fall harvests produced low yields in Lebap. This is due to most farmers planting cucumbers that did not ripen and withered. The selling price of cucumbers in local Lebap markets was also low, as produce from the Mary region flooded the markets, which influenced prices. Generally, most farmers started planting tomatoes around February and will harvest in May and June. More specifics on the

Greenhouse growers from Dashoguz did not plant in August due to fears of crop losses from extremely cold weather in this region, which started in October and continued throughout the

winter season. They are growing vegetables once per year, in February, and harvest in May and June. More results are expected in the Q3 report.

In Ahal, 20% of farmers planted in August and started harvesting by November. These farmers saw the greatest yields, whereas other growers suffered from cold weather in December (-17C⁰), which crippled their plants. As a result, the wholesale price for tomatoes in Ahal rose this quarter from \$1.61/kg in October to \$1.89/kg in December. According to project partners in Ahal, tomatoes came primarily from Mary, and as soon as they arrived, wholesalers bought them and sold them to Kazakhstan where they can profit more compared to local markets. These conditions meant that while production figures dropped for the period compared to the baseline, incomes for producers and sellers increased to price shocks.

As has been the case since the project began, the most successful farmers are from Mary, where weather conditions give them the greatest advantage, as well as significantly strong use of good agricultural practices relative to the other regions. Mary farmers began growing tomatoes and cucumbers as early as July and were able to harvest in October. Tomatoes were sold to Ahal, from where they were mostly exported to Kazakhstan. Cucumbers were sold to Lebap, from where many were exported to Uzbekistan for better prices. Wholesale prices for cucumbers fluctuated from \$0.70/kg in early fall to \$1.75/kg by late December.

The net result of these figures is that farmers who possess the skills and equipment to navigate through the more challenging, colder late fall and winter seasons can earn significantly more value for their crops. Increasing the ability for more farmers to manage this risk to maximize income generation remains a project goal.

CHEVRON FUNDED ACTIVITIES

The USAID Agriculture Technology Program in Turkmenistan has received gift funding from Chevron totaling \$150,000. The project completed the spending of this Chevron funding in Q1 of Y3. An additional gift is expected, though the details of activities and M&E targets for this amount have not yet been solidified. The following are updates on the investment and its results:



LN Generator

The project-procured NL280 400 VAC, 50 Hz 3-phase nitrogen generator and liquefier is fully operational and producing up to 40L per day at the Turkmen State Veterinary Services Laboratory in Ahal. Managers of the AI Centers have access to the equipment to refill large storage Dewar flasks as needed to maintain the cold chain for frozen bull semen being stored for livestock breeding activities. The project still waits for official paperwork to clear for the disposition of the equipment to the State Veterinary Services. USAID and AgTech will hold an official ceremony to commemorate this step forward in livestock development and public-private partnerships in Turkmenistan once all legal matters are settled.

Heat & Pregnancy Detection Seminar for AI Specialists

Following the conclusion of last quarter's livestock breeding training activities, the project is preparing to send the most qualified professionals to the U.S. for intensive training in farms in California where herds can total over 10,000 animals. Taking advantage of this scale of farming will allow AI specialists to rapidly develop skills in palpation and breeding that would not be possible on Turkmen farms where fewer animals means less opportunities for practicing these skills. The idea is to bring back to Turkmenistan and elevated level of skills for breeding to spread knowledge and expertise among the other AI specialists. This will result in fewer accidental abortions, more efficient breeding programs among farmers, and increased rate of breeding success among those practicing artificial insemination. The project is targeting summer of 2013 for the training.

M&E Targets and Results for Chevron Funding

Indicator		Year 2		Year 3		Year 4
Number of direct and indirect beneficiaries (disaggregated by women/men and adults/youth under 18);		55 total	54 male	688 total	407 male	
			1 female		281 female	
			55 adults		688 adults	
			0 youth		0 youth	
Number of partners leveraged		1		1		
Dollar amount of funds leveraged through partnership	Initial USAID Contribution	\$0		\$1,373.16		
	Chevron Contribution	\$114,296.17		\$35,703.83		
Amount of in-kind contribution leveraged through partnership		\$0		\$0		